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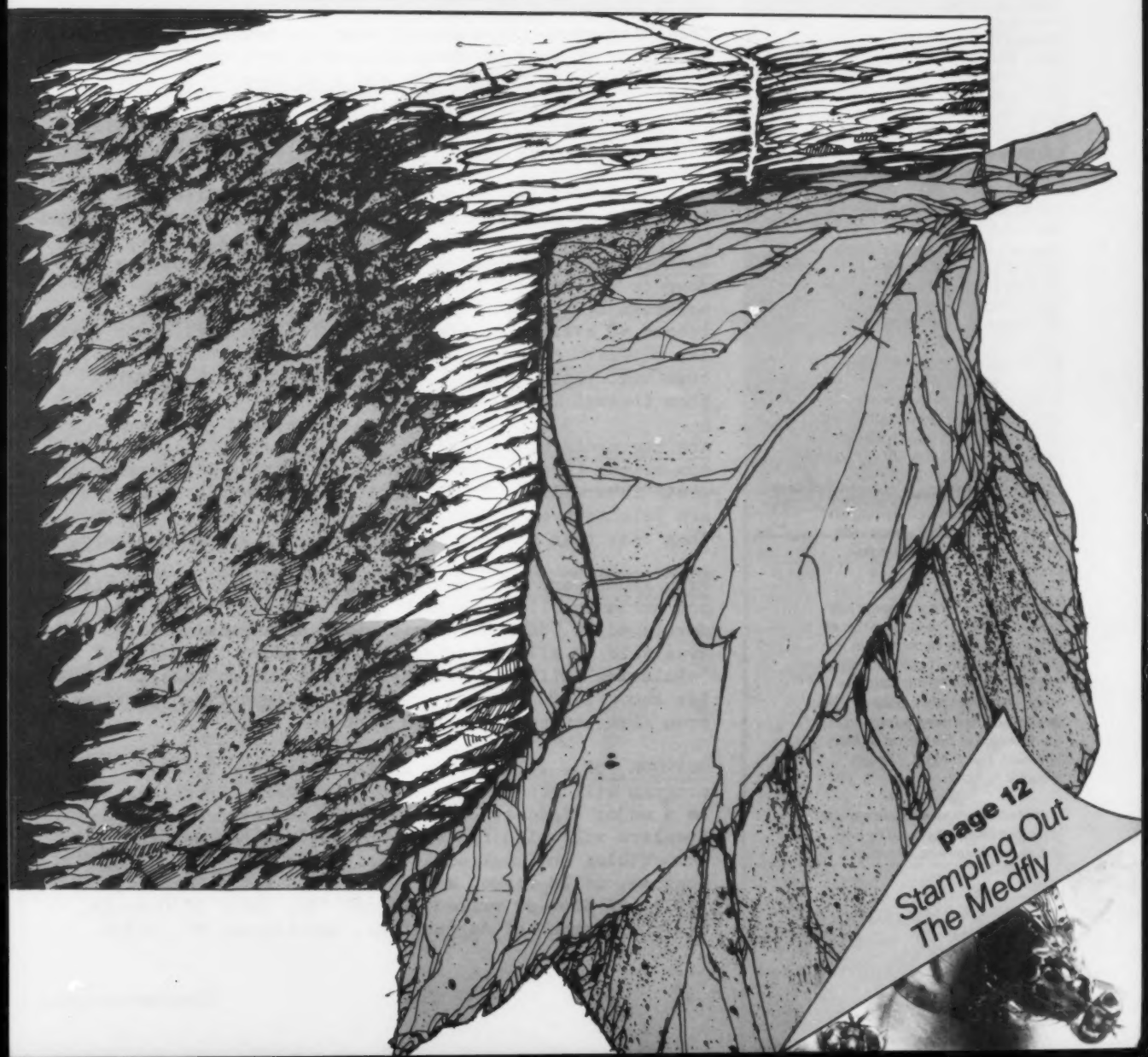
Burley Tobacco: Is Baling a Better Way?



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Stamping Out The Medfly

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PERSPECTIVES

The push to expand export markets may be paying off. USDA analysts are forecasting record farm exports of $44 to $48 billion for fiscal 1982. Attribute the increases to higher volume--estimated at over 170 million tons--as prices probably won't match those of 1980-81.

Downward pressure on world oil prices will help by giving the economies of the major importing nations some breathing room. This should spur the market for U.S. farm products, as many of these nations aren't producing enough to keep up with their needs and will have to buy more. While world grain production should set a record this year, it's the bumper U.S. crop that pushed the figure to 1.6 billion tons, offsetting smaller crops in Western and Eastern Europe and the Soviet Union. We won't be the only nation to benefit. Canada, Australia, and Argentina will be stiff competitors for world grain sales.

Another poor grain harvest for the USSR (estimates are down to 180 million tons) and the Soviets' need to maintain beef production mean they'll have to import a record 40 million metric tons for 1981/82--all their ports can handle. Most of their purchases from the U.S. will come next year, as they appear to have enough to carry them through the fall.

Are the medflies losing? . . . California officials are now saying they consider the prospects for eradicating the pest "favorable." Possible hitch: California dockworkers are reluctant to handle fruit fumigated before shipment. They fear that the insecticides present a health hazard.

From laboratory to farm . . . Private companies may now get exclusive licenses to produce and sell some products developed by USDA scientists. New patents will first be available to all companies, but the added incentive of an "exclusive" will be offered if there are no takers. USDA has about 1,200 patents available on inventions ranging from farm equipment to food proteins.

OUTLOOK '82 . . . How the Administration's economic program will affect agricultural markets and policies will be a major topic at USDA's Outlook conference, Nov. 2-5. Speakers will also focus on the outlook for major commodities and challenges facing the U.S. agricultural economy, world trade, and nutrition. For a program, call (202) 447-3050 or write: Outlook '82, WAOB, 3510-South, U.S. Department of Agriculture, Washington, DC, 20250.

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The more a farm depends on hired labor, the greater the benefits of an efficient labor force. Personnel management practices that reward reliable trained workers can cut labor costs and improve productivity.

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The impressive strengthening of the U.S. dollar on world money markets encourages some export customers to shop around or postpone purchases. On the other hand, a stronger dollar at home means progress in the fight against inflation.

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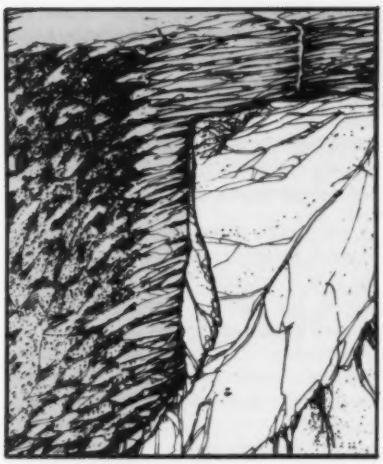
Despite a tough and costly war against the medfly, California growers may have to wait to finish off the pest. If some flies survive the winter, eradication efforts will continue because even one medfly worries growers.

Cracking African and Mideast Markets by *Barry Murray* 14

Africa and the Mideast are proving to be tough customers for the world's largest exporter of farm products. Surprisingly, the U.S. supplies only about 11 percent of the total food imports of these fast-growing markets.

World Hunger Persists Despite Ample Food by *Daniel R. Williamson* 16

On paper, there's enough food for every man, woman, and child on earth, yet severe malnutrition is common in 65 nations. The problem lies in distribution and in the buying power of the world's poor.



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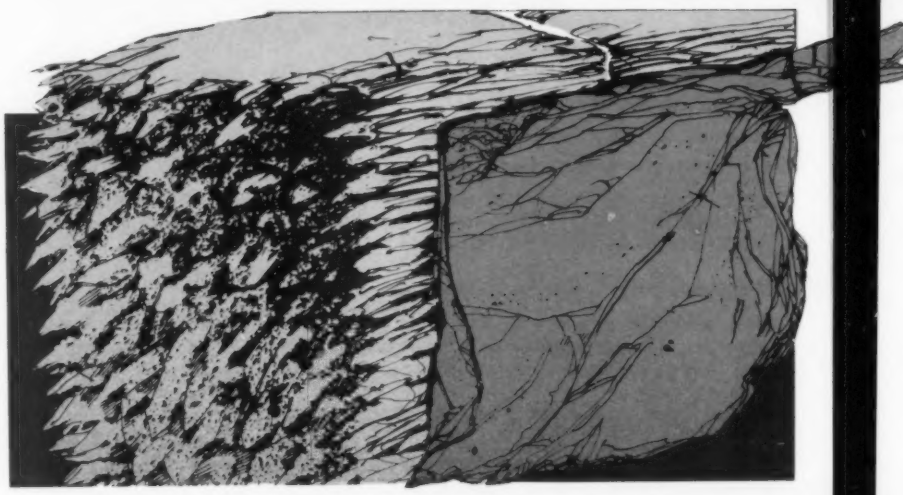
Burley Tobacco: Is Baling A Better Way?



In a business where old habits die hard, some tobacco producers are breaking tradition and bringing in bales.

Bales—"market packages" usually associated with cotton and hay—are cropping up with growing frequency among the familiar baskets of tied "hands" at burley tobacco auctions.

In the usual preparation of burley for market, the cut stalks are hung in barns for 2 to 3 months to dry, or cure. After curing, the stalks are stripped and the graded leaves are bound by another leaf into "hands." The hands are laid flat and piled in baskets holding up to 70 pounds of tobacco for sale at auction warehouses.

Producers have been preparing burley in this way for decades. In fact, before 1978, federal marketing regulations required it.

With baling (also known as "loose-leaf" marketing), harvesting, curing, and stripping are all done as before. But instead of tying up bundles of leaves, the producer compresses from 70 to 90 pounds of tobacco into bales measuring 1 foot wide, 2 feet high, and 3 feet long. All that's needed is a wooden box and something to exert pressure, such as a jack.

The bales are bound with cotton string or twine and sold at auctions in small lots of 400 to 500 pounds, from which a representative bale is opened for inspection.

Some producers have tried "sheeting" as an alternative method of loose-leaf burley marketing. Here the tobacco is placed on an 8-foot-square burlap sheet. The four corners are then tied together to form a package of 175 to 200 pounds of tobacco.

Like baling, this saves time in market preparation, but price supports aren't available for burley tobacco sold in sheets, as they are for bales.

Saving Time and Money

Baling is still a limited practice, but it holds the promise of significant savings in time and money for many tobacco farmers.

"Tobacco production is highly labor intensive, requiring over 300 labor-hours per acre to produce 2,400 pounds of tobacco," says Darrell Mundy, an agricultural economist at the University of Tennessee. Around 40 to 45 percent of the total cost of producing tobacco is for labor, and about half of the labor is spent on conventional market preparation.

Baling can save an estimated 43 to 57 labor-hours—or up to seven 8-hour days—on 2,400 pounds of tobacco. Time savings will be somewhat less if the leaves in the bale are "oriented"—all placed in the same direction—so the tobacco will be eligible for price supports. But, either way, baling takes considerably less time than tying hands.

"Those who hire outside labor to prepare tobacco can benefit," Mundy says. For example, at a wage rate of $3.50 an hour for preparing burley for market, producers can save 6 to 8 cents per pound, or up to $200 per acre.

Last year, burley tobacco prices averaged $1.66 a pound, providing per acre returns of $3,342 at the U.S. average yield of 2,013 pounds per acre. Total costs of production, excluding land and quota costs, were about $2,800. Using these figures, the savings on hired labor possible from baling could have a big impact on the bottom line, sharply boosting the $542 difference between costs and returns per acre.

In addition, many producers report that baling requires less skill than tying hands—an important consideration in a labor market where skilled help is hard to come by.

One possible drawback to baling, however, may stem from its greatest benefit. Although no one can be sure, a shift to baling could mean fewer jobs and less income for farmworkers in tobacco areas. That might force some to find other employment, and it could also leave a smaller work force available to help producers grow and harvest their crops.

Freeing Up Time

Despite the concerns, baling appears to have a lot more going for it than just the advantages related to hired labor costs and skills. The direct time savings to producers and their families can be even more crucial—especially to the small operations typical in the burley tobacco belt.

The quota system, along with limited resources and lack of mechanization, holds most farmers to just a few acres in tobacco. In a USDA survey of Kentucky and Tennessee burley operations, the average farm grew about 2.4 acres in

tobacco, with about 40 acres in other crops.

Despite its small share of total acreage, tobacco provided almost half of gross farm receipts on these farms, according to USDA economists Verner Grise and Owen Shugars.

"The out-of-pocket labor cost savings from baling are lower for small burley producers because they hire less outside labor," says Grise. "Their savings depend on alternative uses of family labor."

Many small burley producers are part-time farmers who depend on off-farm income to stay in farming. Two-thirds of the farms surveyed had family members earning income off the farm.

In fact, the study showed that producers generally earned more off the farm than from burley. The average farm in the study took in around $7,000 from nonfarm employment, or 37 percent of total income, compared with $5,600 from tobacco, 29 percent of all income. On the smallest farms, off-farm earnings were higher than all farm receipts combined.

Family members also supplied over half of the labor used to produce burley. So savings in labor-hours can free family members to bring home more income from off-farm jobs—or devote more time to other farm activities.

Mixed Reception

Baling seems to offer some clearcut benefits for many burley tobacco operations, but will growers, warehouse operators, and buyers accept it?

In a 1978 survey of over 300 growers by the University of Tennessee, 94 percent indicated that they would at least like the option of loose-leaf marketing—whether baling or sheeting. But wide use of baling will also hinge on acceptance by warehouse operators and domestic and foreign buyers.

Of 53 Tennessee warehouse operators surveyed during the 1978/79 marketing season, half wanted to keep using tied hands, but a third said they would like to see loose-leaf sales of tobacco. Of this group, 40 percent preferred bales, according to Mundy.

Those with reservations about baled tobacco said that the bales would probably take up more floor space and would cost more to market. But economist Grise points out that with large volumes of baled tobacco, warehouse operations could actually benefit, because floor space and equipment could be used more effectively.

Resistance may be even stronger among some buyers, though certain cigar types of tobacco have been sold in bales for years and the largest cigarette manufacturers have accepted baling.

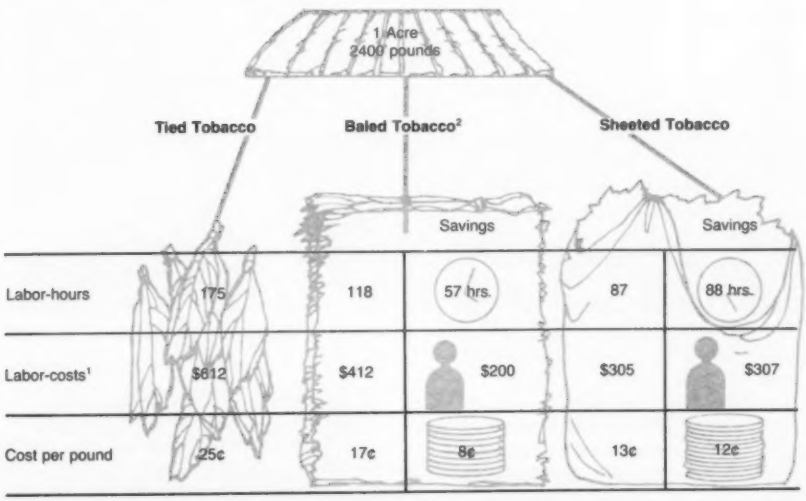
But, like warehouse operators, several buyers insist that handling and processing baled tobacco is more expensive. Though some add that a complete switch to baling and the use of more efficient equipment tailored to bales might reduce processing costs, this won't overcome all the objections.

Some buyers also complain that the quality of baled tobacco is not as uniform as with tied tobacco and that bales can't be stored as long because they're more susceptible to spoilage. Others say stacks of bales can't be properly graded.

Still another complaint by buyers concerns the potential loss of exports with widespread use of baling. They say foreign customers prefer tobacco that is tied in hands and "tipped"—part of the leaf cut off to straighten it. Tipping is essentially impossible with baled tobacco.

Exports are an important source of receipts for burley, with 16 percent of the 1980 crop shipped to foreign markets. For U.S. producers to remain competitive in these markets, without sacrificing net returns, they will have to be more efficient. Baling may be one way to cut costs with little capital investment, but the benefit is lost unless baled burley is accepted in export channels.

Loose-Leaf Burley Preparation Cuts Time and Costs



[1] Assuming all labor for market preparation is hired at $3.50 per hour.
[2] Does not take into account possible discount on baled tobacco. Discount was 2¢ per pound in 1979-80.

Possible Discount

Despite the reservations of some buyers, bales brought the same price as tied hands in the 1980/81 season. But that was due to a limited volume caused by two successive short crops. During the 1979/80 season, hand-tied burley sold for an average of 2 cents more a pound than baled tobacco.

Producers may have to continue to accept slightly lower prices on baled burley, though the savings on reduced labor time should more than offset the discount.

To make it easier for producers to sell baled tobacco, USDA is lifting all restrictions on sales of baled quota tobacco this year.

Since 1978, producers have been eligible for price supports and official grading on limited amounts of baled, oriented tobacco. They could bale up to 25 percent of their total quota in the 1980/81 marketing year, when 77 million pounds of burley were actually marketed in bales, 12.2 percent of the total crop.

The extension of price-support benefits to all baled burley up to the producer's quota will help to reduce market preparation costs and free producers of the registration requirement to market bales. Grise says it remains to be seen whether the full quota eligibility will reduce the discount on baled tobacco.

Homemade Bales for Burley Sales

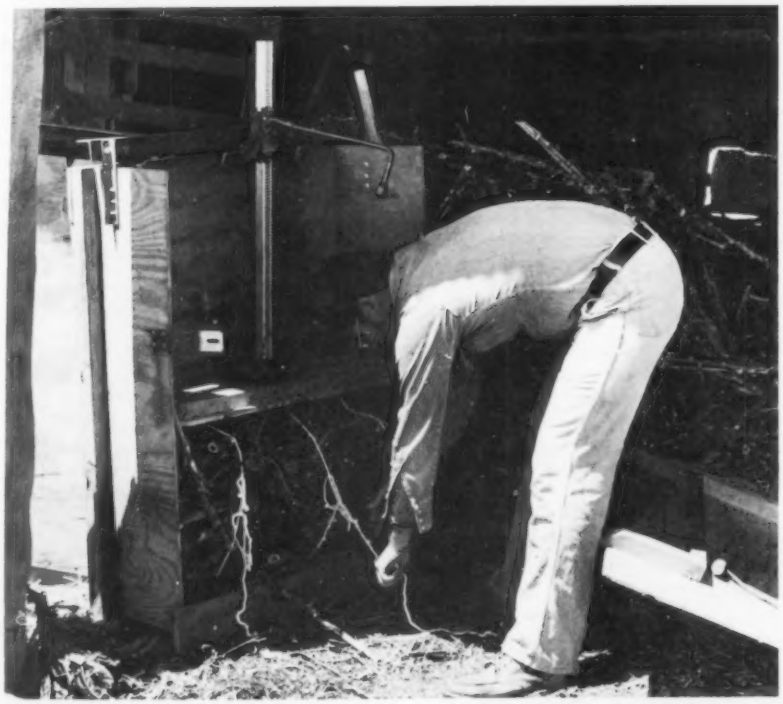
Tying hands is a time-honored way of preparing tobacco for market, and producers aren't going to switch without good reason. Those who have tried it say the time and money saved are reasons enough.

Paul Rawlings, a central Tennessee farmer, grows 4 acres of burley with his father and brother. He has been baling part of his crop for the last 3 years.

"It's a real labor saver," he says. "We've been saving up to 2 weeks by not having to tie it into hands. It's also easier to store and transport, because you can stack it like hay."

Rawlings also likes the flexibility baling gives him. "You can bale it dryer, so you don't have to wait for damp weather to prepare it for market," he says. Tobacco can't be readied for market until it has the correct degree of moisture and pliability. Producers say tobacco in this condition is "in order" or "in case."

Buyers were at first apprehensive about bales, says Rawlings. "They were afraid the compressed tobacco would retain moisture and spoil. But once they saw that wasn't happening, they began treating it like any other tobacco."



Tennessee tobacco producer Paul Rawlings demonstrates the tobacco press he built to bale burley for market.

For instructions on how to build a simple, economical baling press similar to the one used by Rawlings, contact your county Extension agent or write the University of Kentucky, Bulletin Room, Ag. Distribution Center, Lexington, KY, 40546, for Bulletin ID-38, *Preparing Burley in Bales.*

The Profit Approach to Managing Hired Labor

Farmers who rely on more than a few hired hands or seasonal workers may be able to cut labor costs and improve productivity. How? Through better personnel management practices, according to USDA sociologist Leslie Smith.

"Effective personnel management can reduce hiring and training costs to producers, create a more efficient labor force, and offer more employment stability and income for farmworkers," Smith says.

In some cases, producers have gained large returns on their investments of time and money to upgrade and stabilize their labor forces, which range from supervisors to field hands and machine operators.

For example, over a 13-year period, a California lemon growers' association reduced its labor force about 85 percent, upgraded benefits to productive workers, and still increased production about 50 percent. Personnel management practices contributed to this success.

Potential labor savings may exist for other farmers. Bigger farms and ranches demand more labor than many farm families can handle alone. As the trend toward fewer but larger farms continues, hired workers may provide an even greater share of agricultural labor in the 1980's.

In 1950, hired employees numbered around 2.3 million and made up about 23 percent of the total number of people working on farms. By 1980, the number slipped by about 1 million, but the proportion of hired workers had increased to 35 percent of the total.

"During the 1950's and 1960's, mechanization and technology did away with much of the need for hired labor in crops such as cotton and grains," Smith says. "But fruits and vegetables still require manual labor. Also, mechanization has leveled off in the past decade."

The average hourly wage was $3.92 this spring compared with $2.45 in 1975.

Labor Costs Rise

In addition to agriculture's growing dependence on hired workers, there is still a stronger argument for personnel management practices that encourage labor efficiency: the rising cost of hired help.

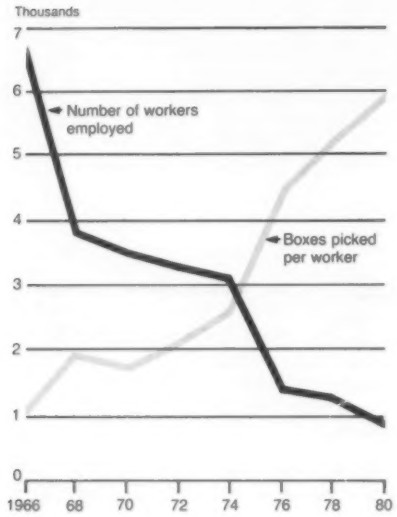
The average farmer spent $4,169 on cash wages, contract labor, and employee benefits in 1980, up from $2,242 in 1975. However, the cost of hired labor varies with farm size and location. For example, California farmers spent an average $23,433 for labor per farm last year, while producers in Ohio paid only $1,492.

This spring, the average hourly wage paid to hired workers (not including custom services) was $3.92, compared with $2.45 in 1975. Nationwide, farmers spent over $10 billion for farm labor last year—7.4 percent of total farm expenditures and $4 billion more than 5 years earlier.

While better farmer-employee relations may not prevent labor needs and costs from rising, they could help increase worker productivity, leading to a better return on the farmer's investment in labor.

California Farms Have Highest Outlays for Hired Labor, Corn Belt Farms Lowest

The Coastal Growers Association Gets Greater Productivity with Fewer Workers



Encouraging reliable, trained workers to return each year is a step in the right direction, Smith says.

"Some people would argue about the need for trained farm labor," she says. "They think that all farm work is unskilled. But jobs like grape picking or tobacco cutting do require certain skills that improve with experience. And livestock workers need to be able to identify animal diseases."

The experienced worker can be more productive. Considering this, it's to the farmer's advantage to keep trained workers coming back each year.

"Greater focus on personnel management is an approach that I think we'll see more of in the next 20 to 30 years, but there is a small core of farmers already using these practices," she says.

One Success Story

The Coastal Growers Association of Oxnard, California—mentioned earlier—is a nonprofit association that has adopted innovative policies for management-employee relations.

According to John Mamer, extension economist at the University of California, the association recognized that trained workers who are willing to come back each year would increase productivity. Its policies give rehiring priority to workers who have the longest unbroken employment record. It also offers wages and other benefits that encourage lemon pickers to return—such as paid vacations to employees who work over 450 hours, opportunities for promotion, health insurance, a retirement plan, modern housing, adult education, and work training.

The association hires no illegal immigrants and doesn't require picking crews to work more than 45 hours a week in spring and 40 hours during the rest of the year, Mamer says. Initially, workers are paid minimum wage, but the most proficient have earned about $9 an hour. "The top picker in 1980 earned over $18,000 for 46 days of work," says Jack Lloyd, manager for the association.

Getting skilled workers to return each year is the main reason why farmers belonging to the association were able to get more lemons picked with fewer and better trained workers, says Lloyd. The total number of pickers employed dropped from around 8,500 in 1965 to 943 in 1980, but the total number of boxes picked rose from 4.3 to 5.6 million.

The association's success in recruiting and keeping good workers is also one factor involved in the relatively small increases in the cost of harvesting lemons. For example, if direct costs kept pace with inflation, the cost per box would have increased from 53 cents in 1965 to $1.10 in 1978. However, the association's direct costs rose to only 67 cents.

Who's In the Field?

The hired farm labor force comprises two major groups: casual or seasonal part-time workers and those who depend on hired farm work for their year-round livelihood and family support.

Most hired farm labor is made up of casual or seasonal workers—usually homemakers and students who work only a few days or weeks during planting time or harvest to supplement other sources of income. About 87 percent of seasonal and casual workers live off the farm. In 1979, they worked an average of 38 days for $831 in farm wages. About 34 percent did less than 25 days of farm work during the year, and another 37 percent worked 25 to 149 days.

Regular and year-round workers are generally white males not living on farms. However, more members of this group are likely to be minorities than those who are in the seasonal category. These workers also tend to be older than seasonal help. Sixty-seven percent are over 25 years old. Regular and year-round workers averaged $6,408 for 259 days of farm work in 1979.

"Contrary to popular impressions, the hired farm labor force is not dominated by migrants," says USDA sociologist Leslie Smith. "Since 1970, the number of migrants has remained relatively stable—around 200,000. Migrants made up only 8 percent of those doing hired farm work in 1979."

AGRICULTURAL ROUNDUP

Handling the Big Harvest

A good fall harvest in years past often meant huge mounds of grain sitting in fields, elevator lots, and even on streets, awaiting empty storage bins or rail cars.

But such scenes may be less common in the harvest weeks ahead despite large corn and soybean crops—both may end up second only to 1979's records—plus a bumper wheat crop that's already in the bin.

If production and exports don't stray too far from late-summer estimates, storage and transportation facilities should be "more than adequate" in most areas, according to USDA economist T. Q. Hutchinson.

Nationwide, only about 75 percent of all grain storage space is expected to be filled on November 1. The reasons: smaller stocks left over from last year's drought-damaged harvest and greater storage capacity both on and off farms.

Estimated Use of Grain Storage Capacity on November 1, 1981[1]

	percent
Colorado	94
Kentucky	91
Tennessee	86
Iowa	85
Missouri	84
Ohio	83
Illinois	80
Minnesota	70
Montana	70
Washington	70
Nebraska	63
Texas	59
Kansas	53
North Dakota	42
Oklahoma	35
U.S. average	75

[1]Estimates based on reported storage capacities on and off farms and August 1 crop forecasts.

Although the rapid expansion in the nation's storage capacity is probably over—partly due to recent cutbacks in federal assistance for constructing on-farm facilities—the storage building program of the last few years has left its mark.

On-farm facilities can now hold more than 11 billion bushels, up 350 million bushels since 1979's bin-busting harvest. Total U.S. storage capacity is 18.3 billion bushels, up 549 million bushels, Hutchinson says.

Of 15 states which account for about three-fourths of U.S. grain production, only seven are likely to fill 80 percent or more of their available storage capacity on November 1. Four of those seven are Corn Belt states.

Of the other three, which head the list, storage may be tightest in Colorado and only slightly better in Kentucky and Tennessee. The latter two states serve as distribution centers for the southeast and, in some years, offer overflow storage for the Corn Belt.

Of course, all this optimism doesn't indicate that there won't be any bottlenecks at the harvest peak. Producers, particularly those in the midwest, should expect some delays in moving grain into local elevators for storage and reshipment.

Even so, transportation tieups aren't nearly as likely to be a problem as in the past, Hutchinson says.

The number of rail cars should be more than enough to fill export and domestic transportation needs as well as to move grain from tight storage areas to those with surplus capacity, he says. Barge capacity also appears adequate.

With additions to the jumbo hopper car fleet, the grain carrying capacity of the nation's railroads has increased about 4.3 million tons since fall 1979. Many of the new cars remained unused during the recent wheat harvest.

Cream of the Crop

She's 12 now and hasn't given milk in 2 years, but Beecher Arlinda Ellen is still the all-time champion cow for producing the most milk in a single year.

As a 5-year old, Ellen gave 55,661 pounds of milk with a 2.8-percent butterfat content in a 365-day period. This is about five times the production of an average cow and 4,912 pounds of milk above the previous record.

Ellen, owned by the Beecher family of Rochester, Ind., broke the old record just a year after it was earned by Mowry Prince Corinne in 1974. Both Ellen and Corinne are Holstein-Friesians and the only known cows who've produced over 50,000 pounds of milk in a year.

For lifetime milk production, the champion is another Holstein, Breezewood Patsy Bar Pontiac, owned by the Gelbke Brothers of Vienna, Ohio. Through 1979, Patsy accumulated a lifetime production total of 367,539 pounds of milk, with a 4.5 percent butterfat content.

Patsy's name is well known in dairy circles. She's the only cow of any breed to ever produce more than 2,000 pounds of butterfat in a single lactation. She completed her best year in 1979, when she was 10 years and 10 months old, yielding 47,500 pounds of milk at 4.7 percent butterfat.

Holsteins make up about 90 percent of the U.S. dairy herd and are higher producers than Jerseys and Guernseys, though the latter two breeds generally average about a 5-percent fat content compared with around a 3.5-percent average for Holsteins. For the past decade, the average fat content for the nation's dairy herd was almost 3.67 percent.

Although she's calved eight times, Ellen has had only one heifer, an offspring that has not shared her mother's capacity for milk production. Early this year, Ellen produced her first calf by embryo transplant, another male.

There are 11 million cows in the national dairy herd, but there's only one Beecher Arlinda Ellen.

The Dollar Gains Clout, But Exports Pay a Price

How does the strength of the U.S. dollar on world currency markets affect our farm sales abroad?

During the 1970's, a weakened American economy hampered by high inflation rates and spiraling oil prices—in addition to the U.S. abandonment of the gold standard—led to a sharp drop in the dollar's value in relation to other major currencies.

In 1970, one U.S. dollar brought 360 Japanese yen and 3.66 German marks. By the end of 1980, a dollar's worth had fallen to only 209 yen and 1.9 marks.

During the same 10-year period, U.S. agricultural exports rose from $7 billion to $40.5 billion. While many factors are responsible—most notably a combination of bad crop years and improving diets in many countries plus the ability of U.S. farmers to fill the void—"cheap dollars" certainly played a role in the dramatic rise.

But the doldrums may be over for the dollar. Since the beginning of this year, the U.S. dollar has gained strength at a rate unmatched by any major currency.

Financial data show that, in the past year ending in July, the dollar had gained about 41 percent against the mark, 22 percent against the British pound, and 6 percent against the yen.

According to USDA economist Dave Stallings, developments both at home and abroad are responsible for the resurgence of the dollar. High interest rates in the U.S. payable on dollar deposits have attracted investments from overseas and helped strengthen the dollar, he says.

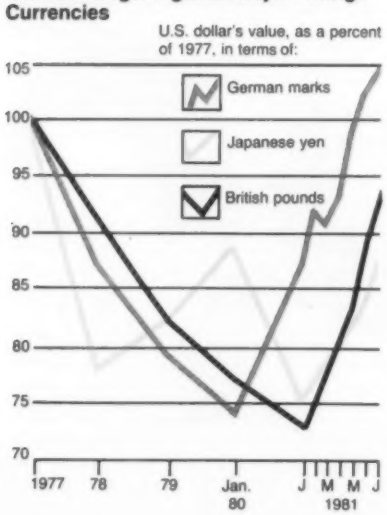
"The crisis in Poland also proved strongly beneficial to the dollar. Even the slightest hint of conflict in Europe sends currency traders scurrying to dispose of European monies and looking to buy U.S. dollars."

Slowdown in Export Growth?

Whether the dollar's recent rebound is a permanent or temporary development is hard for observers to predict. But, as Stallings notes, "The Reagan Presidency has given currency traders considerable confidence in the dollar's future.

"Administration policies are viewed as reducing inflationary tendencies, increasing the productivity of U.S. industry, and expanding investment opportunities. All should prove positive for the long-term international value of the dollar."

After A Sharp Decline, the U.S. Dollar Gains Strength Against Major Foreign Currencies



At Home, a Stronger Dollar Pays Dividends

Although a stronger dollar abroad can hamper U.S. export sales in the short term, a stronger dollar at home could be a healthy plus for the entire economy, including agriculture.

"Most of the benefits farmers will derive from a stronger dollar are due to the overall advantages of controlling inflation," says USDA economist Art Morey. It would mean a slower increase in production costs and less rapid erosion of the dollar's purchasing power, he says.

How is the dollar's strength at home related to its value overseas? In the first place, the dollar's appreciation on world money markets largely reflects current U.S. policies to curb inflation and revitalize our economy.

While the success of these policies is yet to be fully determined, inflation has been running at about a 10.5-percent annual rate so far this year—slower than last year's 13.5-percent rate.

According to Morey, the interrelationship goes a step further because some assistance in the fight against inflation comes from the stronger dollar abroad. The explanation: While an appreciating dollar adds to the cost of U.S. exports for foreign customers, it also helps hold down the cost of imports for Americans—including imports of farm machinery and other agricultural production inputs.

Similarly, it may be helping to contain price increases for fuel and petroleum-based products, such as farm chemicals. OPEC oil prices have been fairly stable this year, and one reason—aside from the oil glut—may be the dollar's strength, Morey says.

Oil is priced in dollars, so a stronger dollar gives the OPEC nations greater purchasing power (in terms of many foreign currencies) without even raising their prices. If the U.S. dollar were losing value on world currency markets, oil-exporting nations would have a powerful incentive for boosting the price of their oil.

However, the dollar's newly found clout on world markets may mean a slowdown for the rapid increases in U.S. farm exports, Stallings says.

To understand how exchange rates affect overseas farm sales, put yourself in the position of foreign importers. When their currency rises in value against the dollar, it takes less of their money to exchange for dollars with which they can buy U.S. farm products. The reverse is also true. When the U.S. dollar strengthens against a foreign currency, it takes more of their money to buy the dollars needed to buy our farm goods.

This leads to speculation on the part of importers much the same way farmers speculate on when to sell their crops to get the highest prices. For instance, a potential foreign importer of a U.S. farm good faced with unfavorable exchange rates may put off the purchase for a time in hopes that his currency will rise in value against the dollar or the price of the commodity he intends to buy drops enough to offset the unfavorable exchange rate.

As more and more foreign importers put off purchases in hopes of more favorable monetary conditions, U.S. farm export sales can suffer. Also, unfavorable U.S. exchange rates cause importers to shop around in other nations for cheaper prices if the same commodity is available elsewhere.

Supply and Demand

But needed purchases can only be postponed so long, and shopping around doesn't help unless other nations have exportable supplies. For these reasons, USDA economist Eileen Manfredi sees the basic economic principles of supply and demand as remaining, by far, the most important factors in our farm export outlook.

She says exchange rates affect only commodities where importers have the luxury of finding supplies in competing nations, such as soybeans from Brazil or rice from Thailand. Commodities where the U.S. carries an overwhelming comparative advantage are much less likely to be affected.

Further discounting the impact of exchange rates on our farm sales abroad, according to Manfredi, are the import levies imposed by the European Community (EC). In fiscal 1980, the EC accounted for about a fourth of total American farm exports.

"No matter what happens to exchange rates, importers in the EC still pay a price for many commodities which is pegged to domestic European prices and may not change with exchange rate fluctuations," says Manfredi.

However, U.S. soybeans, the leading sales item to the EC, are not protected by the import levies of the EC. In fiscal 1980, the EC purchased $3 billion worth of American soybeans.

"During 1981, there has been a definite drop in soybean exports to the EC," says USDA economist John Dunmore.

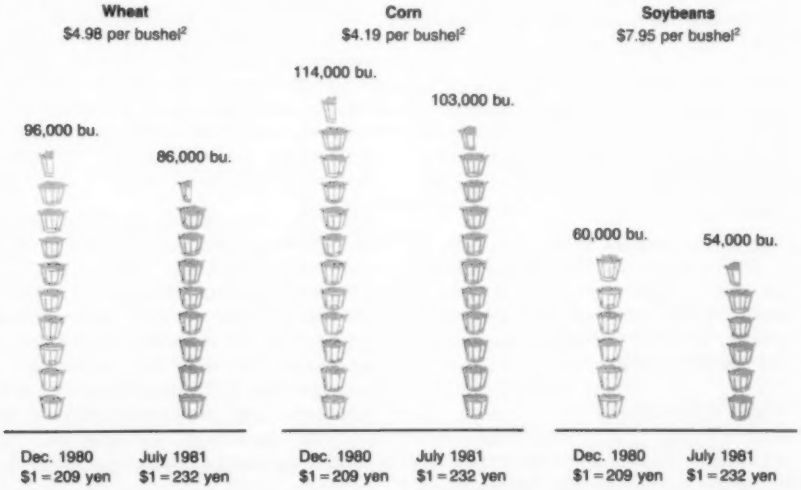
"But," he cautions, "at this point it's too early to say whether the sales dropoff is due primarily to a stronger dollar or reduced demand for livestock feed in the EC."

Because many developments affect trade, it's not easy to spell out how big a role the stronger dollar has played, or will play, in the U.S. export picture. However, analysts generally agree that it's at least partly responsible for our weaker-than-expected export performance this year.

Last November, USDA analysts predicted that our export sales would reach about $48.5 billion in the 1981 trade year. Since then, the estimate has been lowered three times to the current $44.7 billion. Each time, the stronger dollar got part of the blame.

Here's the Difference Exchange Rates Can Make to a Japanese Customer

How many bushels of wheat, corn, or soybeans would 100 million yen buy at the U.S. prices listed below? It all depends on exchange rates. At December 1980 exchange rates, 100 million yen would go a lot further than at July 1981 rates:[1]



[1] To isolate the effects of exchange rates, this example artificially holds wheat, corn, and soybean prices constant. Of course, like exchange rates, commodity prices are constantly changing and may offset or reinforce the effects of exchange rate fluctuations on the costs of our products to foreign buyers.
[2] June 1981 U.S. export prices, all ports.

Stamping Out the Medfly

California growers may have to wait till next year to finish off the Mediterranean fruit fly threatening their crops.

While Florida seems to have gotten the small numbers found there under control, California suffered a series of disappointments in its fight against the medfly.

When three medflies first appeared in detection traps in Santa Clara county in June 1980, the California government had hoped that a combination of fruit stripping, sterile flies, bait traps, and ground spraying could eradicate the insect.

However, the infested area was larger than expected, and things took a turn for the worse. No one really knows why the infestation began to grow, but one of the techniques to fight the medfly may have backfired: Some fertile medflies possibly found their way into a shipment of sterile ones.

Just as harmful to eradication efforts, though, were the motorists who continued to carry infested fruit out of the area despite the widening quarantine. The flies spread from the backyard orchards where they first appeared to areas close to the state's commercial crops, including the San Joaquin Valley, where the bulk of the fruits that host the medfly are grown.

Because the biological and genetic control techniques that had worked earlier take time and aren't effective with widespread infestation, there was no alternative left but aerial spraying with malathion, in the form of baited droplets.

Even so, some medflies may survive the winter and reappear in the spring, says USDA economist Roger Conway. That's when officials and growers hope they can wipe out the remaining population.

Life Cycle

Only the adult fly is vulnerable to aerial spraying. Once the female has deposited her eggs in a fruit, the developed larva begins to eat its way out. When the fruit falls to the ground, the larva burrows into the ground to become a pupa, which emerges as an adult fly 6 to 11 days later.

With the coming of cooler weather in the fall, the pupa goes into dormancy and remains in the ground until the spring. This is the most resistant stage in the life cycle, but growers will be spraying the insecticide diazinon on the ground around the trees to destroy the burrowing larva and the emerging adult fly. They'll resume malathion spraying next spring, if necessary.

Spraying is nothing new to growers, but those in infested areas will have to spend more to combat the medfly. And because of the quarantine, they'll need to build more fumigation chambers for treating the fruit before it can be shipped.

Another problem is the possibility that spraying will destroy medfly predators along with the medflies. However, according to Merrill Cleveland of USDA's Agricultural Research center in Beltsville, Md., the baited droplets used to carry the malathion are designed to attract only the medfly, and few other insects should be affected.

While the number of flies being found is small compared with past infestations, when as many as a thousand flies were found in a single trap, the stakes are so high that even one medfly worries growers.

The farm value of fruits and nuts in California is around $3 billion. Medflies can easily destroy—or at least make it more difficult to sell—25 to 50 percent of a crop. A heavy infestation could wipe out the entire crop.

Who's Vulnerable?

Unfortunately, California's biggest fruit and vegetable crops are the ones most attractive to the medfly—citrus fruits, peaches, apples, cherries, tomatoes, peppers, avocadoes, and some nuts—over 50 in all. While the range of fruits, vegetables, and nuts that can host the medfly is large—over 250—the insect is no threat to other major field crops.

Although the infestation has been limited to California and Florida, it could have spread to any of the southern states with climates warm enough to harbor the fly, Cleveland says.

In fact, any state where the host crops are grown could be hit, but in the colder states the medfly would have to be introduced with each growing season, as the climate would be too cold for the pupa to survive the winter. Both the adult and the pupa die within a few days in temperatures below 42 degrees.

In the past, only Florida, Texas, and California have had significant medfly infestations. The first, in central Florida in 1929, was the worst, when 6,000 state and federal workers battled the fly for almost 2 years with arsenical-molasses bait sprays. The infestation covered 188 square miles and cost over $7 million to wipe out. The damage to crops was substantial.

The quarantines imposed to contain the current outbreak affect more than shipments within the U.S. In August, Japan indicated it will not accept any produce from quarantined areas and won't accept any from other areas in California that hasn't been fumigated or cold-treated to destroy the larva.

Growers are rushing to build more fumigation centers, but they won't know how many they'll need until it is clear how extensive the infestation is. There are only 33 EPA-approved centers near the infested areas, plus some temporary structures that must be monitored at every treatment. The facilities take 3 to 4 weeks to build, at a cost of $35,000 to $40,000, and must be operated by trained workers to be safe and effective.

REPORTS IN THE NEWS

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The Changing Farm Sector

Cattle feeding, broiler production, and vegetable processing have all undergone great transformation since World War II into concentrated, integrated, industralized operations.

At one time, cattle feeding was dominated by small farmer-feeders located mainly in the Corn Belt. As recently as 1964, more than 60 percent of all fed cattle were marketed from small feedlots with less than 1,000 head capacity. A decade later, these lots accounted for only 35 percent of all cattle fed.

The emphasis in cattle feeding has shifted to large commercial feedlots located in the southern Plains and western states. By 1976, one-half of the 24.2 million cattle fed came from fewer than 400 feedlots, while 134,000 smaller feedlots produced the rest.

The broiler industry has often been cited as a model which may characterize farming of the future. The location of broiler production shifted from all across the country to the south central and south Atlantic states.

The relocation helped processing and production increase fivefold, since producers in the new areas were not hampered by capital investment based on prior production methods or existing institutions governing the production, financing, and marketing of broilers.

Although vegetable production was widely scattered prior to World War II, the eastern states accounted for a significant proportion of total commercial output. Now production, particularly of vegetables for processing, is concentrated on the west coast, primarily California.

Consumer demand for vegetables in processed form has increased dramatically, from 44 pounds to 80 pounds per person. Fresh vegetable consumption per capita decreased 150 pounds in the last 20 years.

From developments in these sectors, researchers conclude that structural change occurs in four stages, with structural impacts within each stage.

They are (1) new technology is adopted by farmers, input suppliers, processors, and distributors; (2) regional shifts occur to more productive areas, producing a concentration of output in certain areas; (3) dramatic changes take place in the size and number of producing units; and (4) new strategies and institutions for risk are developed.

Structural Change in Agriculture: The Experience for Broilers, Fed Cattle, and Processing Vegetables *(TB-1648), by Donn A. Reimund, J. Rod Martin, and Charles V. Moore.*

Incorporating the Farm

Incorporation may pay dividends for farmers who gross $25,000 a year or more.

Corporate tax rates were reduced twice during the 1970's. Partly for this reason, farms operated as sole proprietorships and partnerships often pay higher income taxes than incorporated farms with the same income.

They also suffer more from tax bracket creep which occurs when incomes rise along with inflation but tax rates are not adjusted. Bracket creep, which the Economic Recovery Tax Act of 1981 is designed to alleviate, has been a strong incentive for farmers to incorporate.

Other advantages of a corporate arrangement: It can offer more flexible and inexpensive ways of providing fringe benefits, such as retirement and insurance plans, for family members or hired workers. Premiums paid on certain insurance policies are fully deductible for corporations, and employees are not required to report the premiums as income.

Transfer of stock may help to keep the farm in business and in the family from one generation to another, since nonfarming heirs may keep their inheritance in the farm if they see it will be operated efficiently.

From 1974 to 1978, the number of incorporated farms about doubled, but they account for only about 2.3 percent of all U.S. farms. In the latest count, 87 percent of U.S. farms were still sole proprietorships.

Farmers forgo incorporation for many reasons. Complex bookkeeping, tax rules and regulations, and lack of time to devote to managing the legal aspects of a corporate farm business organization are important reasons why farmers apparently prefer sole proprietorships and partnerships.

Before making any decisions based on this publication, producers should seek professional legal and tax planning assistance. Producers should also study the provisions of the new tax legislation to determine how it affects the relative advantages of alternate ownership arrangements.

Economic and Federal Tax Factors Affecting the Choice of a Legal Farm Business Organization *(AER-468), by Michael Boehlje and Kenneth Krause.*

Energy-Labor Ratios for Industry

Recent fuel shortages have led to efforts to reduce their impact on incomes and employment.

The January 1977 "big freeze" over the Great Lakes and along the Ohio and Mississippi Rivers disrupted truck and rail shipments of fuel and virtually paralyzed water transportation. Half a million people were laid off because of the fuel shortage.

The coal strike of 1978 forced some utility companies in Pennsylvania and Indiana to cut fuel supplies to their customers by 25 percent. Other industries were affected by the strike, and when it ended, 25,000 persons were out of work.

To help judge the effect of rationing energy during such shortages, energy use was weighed against labor use in 450 manufacturing industries.

Researchers found that 32 industries, such as chemicals and primary metals, used half the manufacturing energy consumption but employed only 5 percent of the people working in manufacturing. Employment in these 32 "high energy/labor industries" was found to be somewhat more concentrated in nonmetropolitan areas than was all manufacturing employment.

On the other hand, 329 other manufacturing industries, such as apparel, machinery, and transportation equipment, used considerably more labor—hiring four-fifths of the sector's labor force—and used only one-fifth of the energy supply.

Energy and Labor Use by Rural Manufacturing Industries *(RDRR-26), by Edward J. Smith.*

Cracking African and Mideast Markets

Africa and the Mideast are proving to be tough customers for the world's largest exporter of farm products.

Surprisingly, the U.S. supplies only about 11 percent of the total food imports of this region. This is even more baffling when you consider that the area contains many of the oil-rich nations of OPEC. Since the oil price hikes of 1973, these nations have helped push the entire region into the spotlight as one of the fastest growing markets for food imports.

According to USDA economist John Parker, the agricultural imports of African and Mideast countries totaled a little less than $3 billion in 1972. By 1980, total imports had soared to $30 billion. OPEC countries in this area accounted for over $18 billion, or 60 percent, of the region's total farm imports. Saudi Arabia alone increased its purchases from $200 million in 1972 to $4.4 billion in 1980, more than a 2,000-percent increase.

However, while the U.S. share of farm trade usually grows when markets are expanding, our sales to Africa and the Mideast have not kept pace with their increasing imports.

A look at trade with OPEC nations in the region reflects this development. In 1972, the U.S. held about an 11-percent share of their farm imports, Parker says. This represented $183 million in total farm sales. Last year, our sales reached $1.3 billion—a big increase—but the U.S. share of the market had fallen to around 6 percent.

Since the oil-price spiral of 1973, the best performance by the U.S. was about a 23-percent share of the Mideast/African OPEC market in 1974. This was mainly the result of serious farm production shortfalls in nations that typically supply Africa and the Mideast.

EC Competition

Why does the U.S. fare so poorly? The reasons are numerous.

Most telling is the stiff competition the U.S. faces from the European Community (EC). In 1980, EC farm sales to all African and Mideast nations totaled $6 billion, around $3 billion more than U.S. sales.

The EC has several advantages in the competition: Europe is closer to Africa and the Mideast and has a history of strong ties going back to the days when many of these nations were colonies of EC members.

Far more important are the huge subsidies the EC offers to promote agricultural trade. These subsidies have allowed EC exporters to underbid U.S. suppliers, even though production costs in the EC are generally higher.

When EC grain production is ample, subsidies can be high. Under such conditions, it is sometimes impossible for U.S. suppliers to compete.

Political differences have also been a factor, not only in the case of Iran. Some of these nations, such as Libya, have close ties with the Soviets, while some object to U.S. policies in Africa and the Mideast.

In the past, an Arab boycott of U.S. firms that do business with Israel hindered U.S. sales. While a few—Egypt, Morocco, and Iran—have rescinded this practice, some firms in Saudi Arabia and some other countries still won't deal with U.S. firms that sell to Israel.

In addition, as USDA trade analyst Jim Coyle points out, the U.S. has not always placed enough emphasis on these markets and has sometimes failed to aggressively promote products that

Africa and the Mideast

[1] Excludes OPEC nations outside the region: Venezuela, Indonesia, and Ecuador.

"In the past, U.S. export expansion has taken care of itself. But now we must go overseas and develop these markets."

have special appeal, such as poultry and many processed food items.

Rising Sales

"Our share of the growth in agricultural exports to Africa and the Mideast has been poor," Parker admits. Nonetheless, he notes that our sales to the region have been setting records and should continue on this course.

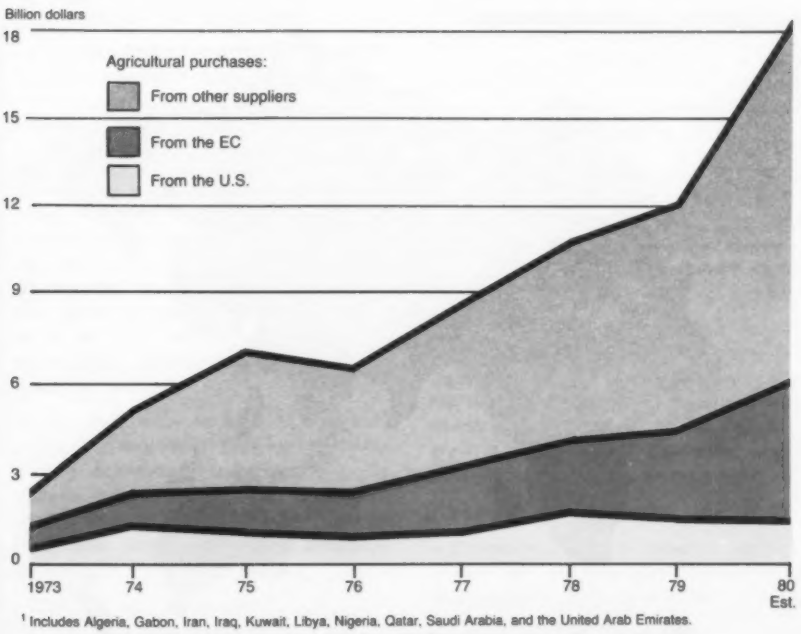
He predicts that U.S. agricultural exports to Africa and the Mideast should approach $4 billion in 1981, compared with $2.9 billion in 1980. So far, the largest selling items have been wheat, rice, corn, vegetable oils, tallow, pulses, tobacco, and frozen poultry.

According to Parker, Egypt should become the first Mideast market to top $1 billion in purchases of U.S. farm goods—probably this year. Last year, U.S. agricultural exports to Egypt were valued at $770 million.

The second leading market for U.S. farm products in the region is Saudi Arabia. The Saudis bought $375 million worth of U.S. rice, wheat, poultry, apples, and fruits and vegetables in 1980. This year, U.S. sales should reach $561 million.

Nigeria is also one of our major markets. Parker expects our farm sales there to rise from the $348 million in 1980 to $480 million this year.

U.S. Farm Sales Haven't Kept Pace with Growth in Mideast/African OPEC Markets[1]



[1] Includes Algeria, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, and the United Arab Emirates.

U.S. farm sales to Iran—previously the largest Mideast market for our farm products—dropped to practically nothing last year. However, since the release of the U.S. hostages in January 1981, U.S. sales have rebounded and may reach $200 million this year. This includes about 1 million tons of wheat and considerable supplies of corn and sugar.

Market Development

Many trade analysts see the Mideast and Africa as areas where U.S. farm exports have their greatest growth potential because of rapidly rising incomes, growing cities, limited area for farmland, and improving diets.

Coyle identifies Iraq and Algeria as the markets with the most potential in the region. Both countries have rapidly growing populations and each has adopted policies to eliminate food shortages and add meat and processed foods to diets.

Last year, Iraq purchased $225 million of U.S. wheat, rice, meat, frozen poultry, and dairy products. Algeria bought $175 million of U.S. wheat, meat, and dairy products. Coyle says that more aggressive marketing practices on the part of the U.S. in Africa and the Mideast could lead to a more dominant role for U.S. farmers.

"In the past, U.S. agricultural export expansion has taken care of itself. But now we must go overseas and develop these markets," Coyle says.

The recent visit to North Africa by a USDA trade team on a campaign to expand farm sales was a step in the right direction, he says.

Shifting emphasis away from only grain commodities and focusing more on sales of consumer-ready commodities such as apples, canned vegetables, frozen poultry, and dairy products should also lead to an increase in U.S. farm sales, Coyle says.

World Hunger Persists Despite Ample Food

On paper, there's no reason for widespread malnutrition to exist in the world.

Even after poor 1980 harvests in the U.S. and many major producing countries, total world grain consumption was only 25.7 million metric tons more than production.

This deficit seems relatively small compared with the ample stocks on hand of 191.5 million metric tons. Moreover, in the coming marketing year, USDA projects that world production will safely exceed consumption.

"The world has more than enough food to feed every man, woman, and child," says USDA economist Donnel O'Flynn. The problem lies in distribution and in buying power on the part of the world's poor.

While extreme cases such as widespread starvation in the wake of warfare and turmoil in such places as Somalia, Uganda, and Cambodia seize the international spotlight, milder but continuous food shortages affect far more people. Severe, systematic malnutrition—where people are unable, day after day, to obtain the nutrients they need to maintain good health—is common in 65 developing countries, according to the United Nations Food and Agriculture Organization (FAO).

In fact, FAO estimates that a half-billion people—more than 1 out of every 10 humans—suffer from chronic malnutrition.

In the 65 countries identified by FAO as having the highest concentration of malnutrition—countries with about a third of the human race—the per capita income is less than $680 per year.

"At least half of their people live in abject poverty," O'Flynn says. "People are unable to purchase a regular and dependable supply of food."

Severe, systematic malnutrition is common in 65 developing countries.

World stocks may be ample, but most of the food reserves are concentrated in a few countries, such as the U.S., some European nations, Canada, and Australia.

Lack of purchasing power, woefully inadequate transportation and storage facilities, and poor distribution systems in many developing nations keep millions of people from getting their share of the food.

Many developing countries—and even some developed nations, such as

The Worst Hunger Problems Are Concentrated in the World's Poorest Nations

Poland—are unable to produce enough and must, therefore, depend on food aid, cash purchases, or both.

Progress Since the 1950's

In most developing countries, per capita food production has climbed steadily since the 1950's, even as those populations have nearly doubled, O'Flynn says. Africa, which has seen per capita production decline in the 1970's, is the big exception.

For example, the population in Latin America increased from 160 million in 1950 to about 360 million today—a 125-percent increase—but food production grew still faster so that per capita production grew 24 percent. Yet 17 to 18 percent of the area's people are estimated to suffer from malnutrition.

O'Flynn stresses that the ultimate answer to food shortages must lie in the great untapped agricultural resources of many developing nations. "Food security will not be a reality until developing countries themselves are more effective food producers.

"If farmers there have better access to credit, improved management techniques, new and superior crop varieties, irrigation, and improved land, the result will be better yields."

In recent years, more developing nations have stressed improving agriculture. Mexico, for example, is trying to boost domestic food production by investing money from oil exports into agriculture. The goal: to attain agricultural self-sufficiency by 1985. Of course, not all developing nations are blessed with huge oil reserves.

In the past, many developing countries pushed "cheap food" policies that hamstrung agricultural development. To placate urban populations, they kept food prices so low that farmers lacked incentive and capital to produce efficiently.

"During the 1950's, 50 million tons of grain would have filled the gap. Today, perhaps triple that amount would be needed."

However, even with new policies to boost domestic food production, most developing nations face a long, uphill struggle to feed their people. Population pressures alone provide a very formidable obstacle: World population is now increasing by 200,000 people each day, 90 percent of whom live in developing countries.

Filling the Gap

Much of the growing world food need must be filled by U.S. agriculture, which already accounts for over half of all grain traded on world markets. The U.S. sold an estimated $44.7 billion in farm products abroad during the 1980/81 trade year that ended last month.

In addition to growing cash sales, U.S. farmers profit from government food aid programs which enable them to sell food to foreign customers who couldn't otherwise afford it. The U.S. provided $29 billion in food aid—four-fifths of the world total—from 1954 to 1979.

U.S. food aid is distributed through the P.L. 480 "food for peace" program which was established in 1954. From the beginning, a major program goal was to lay the foundation for new markets for U.S. farmers while reducing burdensome surpluses.

Most of the P.L. 480 food is sold to the recipient nation at market prices, with the help of longterm, low-interest loans which are paid back to the U.S. Treasury after a grace period. Currently, about $400 million a year is being repaid.

Other P.L. 480 provisions provide:

- Emergency aid to disaster victims. When an earthquake devastated Guatemala in 1976, $14 million in food aid was provided.
- Food for nutritionally vulnerable groups such as infants and pregnant and nursing women. In 1979, $215 million was provided to furnish wheat and dry milk to mothers and young children in developing countries.
- Technical help to increase agricultural production. In 1979, $787 million was spent on projects sending U.S. agricultural experts and farming equipment to help developing countries boost their food production.

One form of technical aid is indirect. When developing nations spend the income from food sales to improve agricultural production, that amount is subtracted from the P.L. 480 loan balance. Last year, $85 million worth of commodities were shipped on these terms.

While America has provided by far the most food aid, other developed nations have been even more generous according to their means. Sweden's per capita expenditure for food aid is $95 annually compared with $22 for the U.S.

Despite such assistance from developed nations, developing nations need more help than ever now.

"During the 1950's, 50 million tons of grain would have filled the gap," says O'Flynn. "Today, perhaps triple that amount would be needed. Food-aid donor countries cannot begin to afford to supply these levels of assistance."

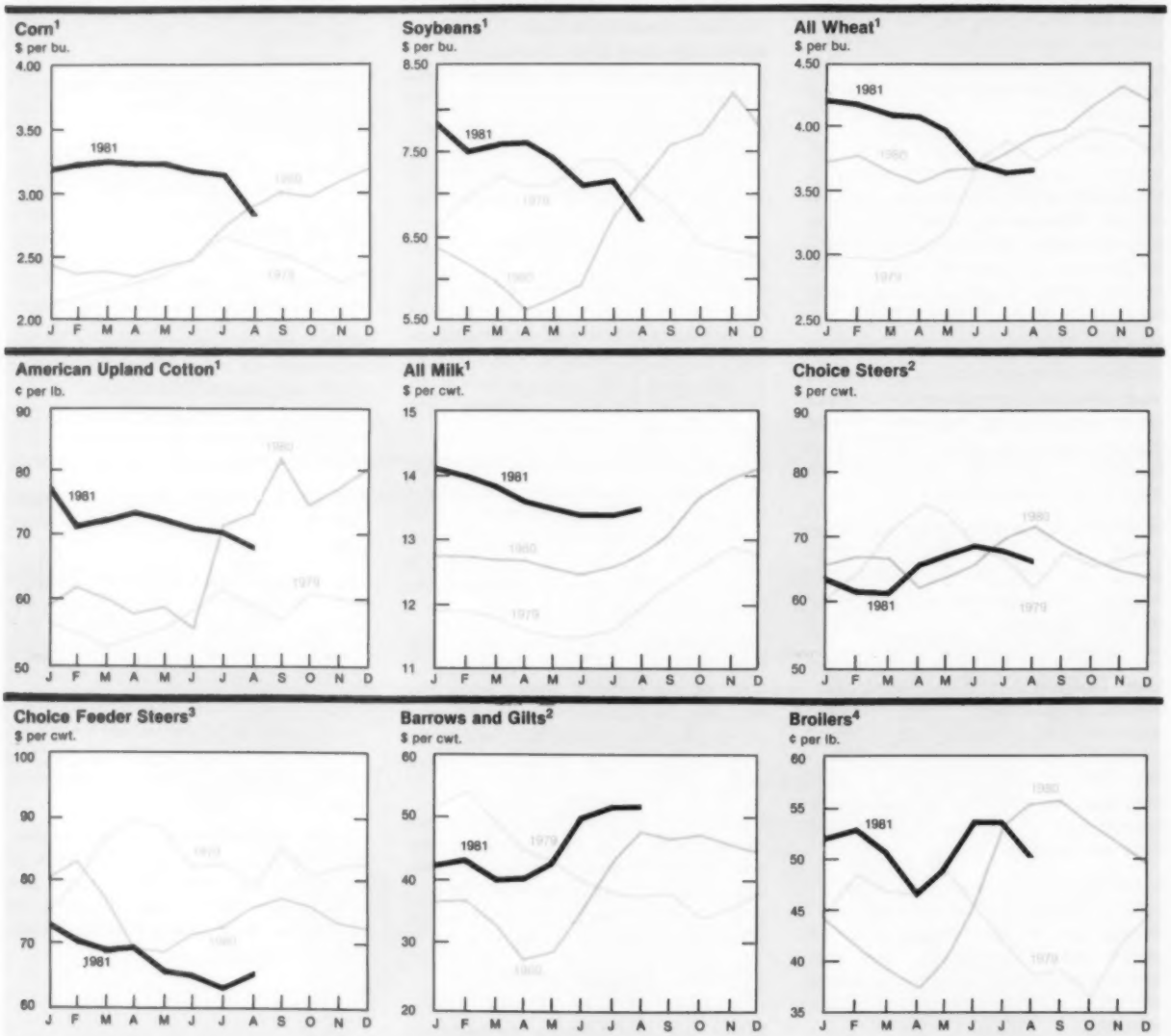
As bleak as this may be, O'Flynn finds some hopeful signs as well. "Developing country per capita food production is growing," he notes.

"Economic development should continue to occur at a faster rate than in developed countries. Birth rates are beginning to fall. In time, the absolute number of malnourished persons may begin to decline."

FARMLINE TRENDS

Monthly Price Monitor

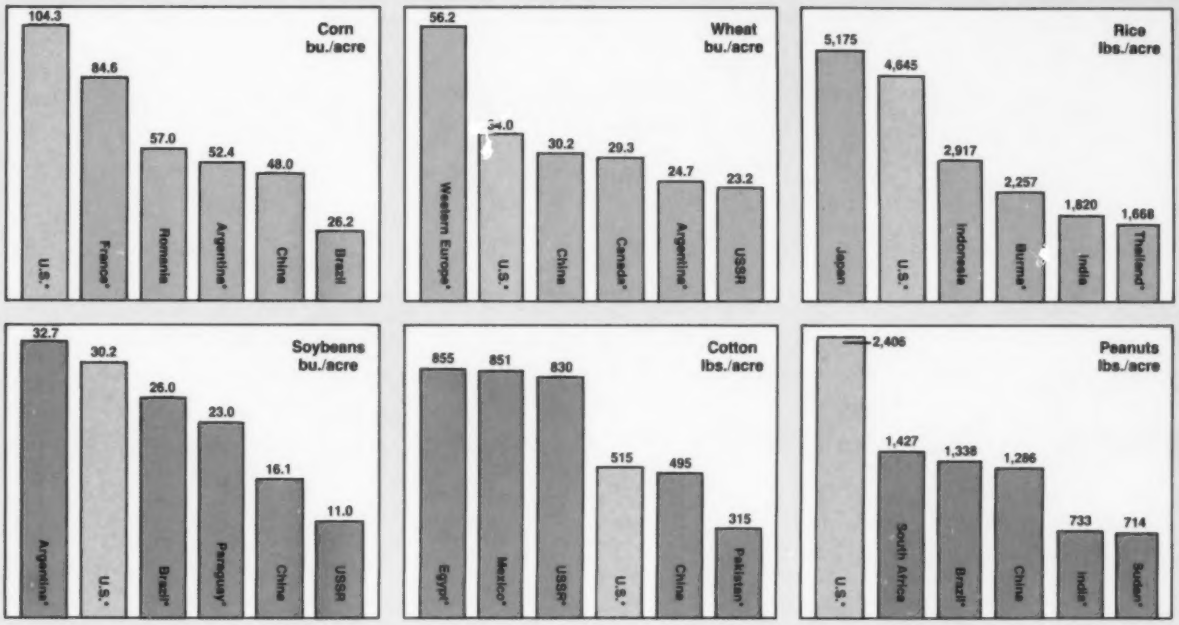
Prices for major commodities continued to fall in August. All but milk and Omaha barrows and gilts were below August 1980 prices. Soybeans dropped below $7, cotton prices were the lowest since June 1980, and previously strong corn prices fell 32 cents and went below year-ago levels for the first time since spring of 1978. Wheat, though, leveled off after declining steadily for the last 8 months. Kansas City Choice feeder steer prices also picked up, but Omaha Choice steers dropped more than a dollar. Prices for New York broilers were below year-ago levels for the first time since May 1980.



[1]U.S. average prices received by farmers. Prices for the latest month are mid-month averages. [2]Omaha. [3]600-700 lbs., Kansas City. [4]Wholesale, New York.

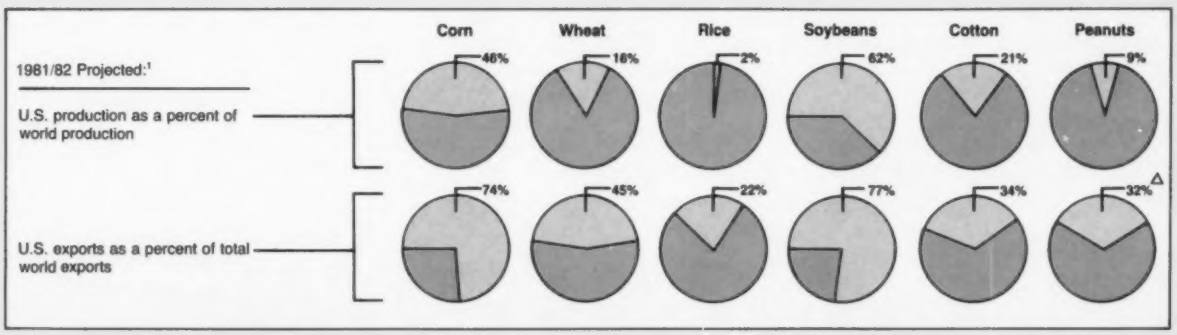
U.S. Productivity in World Perspective

U.S. crop yields are among the highest in the world. Here's how they're likely to stack up against the yields of some major foreign producers and exporters in the 1981/82 crop year.[1]



*Major exporter.

With a good harvest, U.S. crops will account for a big share of the total world production, but they'll play an even bigger role in world trade.



[1]Based on August forecasts. △Unofficial estimate.

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